PHILIP ENVIRONMENTAL
CHEMICAL GROUP
WESTERN REGION

Inter-Company/Departmental Communication

November 7, 1997

CERTIFIED MAIL

Mr. David Domingo
EPA Project Coordinator
U.S. EPA
1200 Sixth Avenue, M/S WCM-121
Seattle, WA 98101

Mr. Domingo:

Following is the Bimonthly Progress Report required by the 3008(h) Order (Burlington Environmental Inc. dba Philip Services Corp.) for RFI activities completed at the Port of Seattle Pier 91 Facility for the months of September and October 1997.

Description of Work Completed

- Ecology is going forward with the agency initiated permit modification to reference the MTCA order and rescind the 3008h order.
- Completed fourth quarter 1997 groundwater sampling and water/product levels in October.

Summary of All Findings

- Fourth quarter 1997 groundwater monitoring data are enclosed.

Projected Work for Next Reporting Period

- Complete first quarter 1998 groundwater sampling and water/product levels in January.
- Train Port of Seattle employees in ground water sampling techniques so that the Port can take over ground water sampling activities beginning with the second quarter sampling event. PSC will continue to analyze the samples and manage the data.

If you have any questions, please contact me at (425) 227-6121.

Respectfully,

Carolyn Mayer
Corrective Actions Specialist

cc: Galen Tritt, Ecology NWRO

VOCs in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*75-71-8*	*74-87-3*	*75-01-4*	*74-83-9*	*75-00-3*	*75-69-4*	*75-35-4*	*67-64-1*	*75-15-0*
MTCA Method B (ug/l)		*1600*	*3.37*	*0.023*	*11.2*	*PQL = 10*	*2400*	*0.0729*	*800*	*800*
Well Number	*Sample Date*	*Dichloro-difluoro-methane (ug/l)*	*Chloro-methane (ug/l)*	*Vinyl chloride (ug/l)*	*Bromo-methane (ug/l)*	*Chloro-ethane (ug/l)*	*Trichloro-fluoro-methane (ug/l)*	*1,1-DCE (ug/l)*	*Acetone (ug/l)*	*Carbon disulfide (ug/l)*
CP-103A	10/10/97	<1	<1	<1	<1	9.07	<1	<1	<5	<1
CP-103B	10/10/97	<1	<1	<1	<1	<1	<1	<1	<5	<1
CP-104A	10/7/97	<1	1.09	1.07	<1	<1	<1	<1	18.1	1.04
CP-104B	10/7/97	<1	<1	<1	<1	<1	<1	<1	21.5	61.8
CP-106A	10/10/97	<1	<1	<1	<1	<1	<1	<1	8.37	<1
CP-106B	10/10/97	<1	<1	<1	<1	<1	<1	<1	<5	<1
CP-107	10/9/97	<1	<1	1.02	<1	9.02	<1	<1	21.2	1.16
CP-108A	10/7/97	<1	<1	<1	<1	6.41	<1	<1	10.2	<1
CP-108B	10/7/97	<1	<1	<1	<1	<1	<1	<1	16.1	1.84
CP-109	10/9/97	<1	<1	<1	<1	30.9	<1	<1	6.32	5.58
CP-110	10/10/97	<1	<1	<1	<1	7.95	<1	<1	<5	<1
CP-111	10/7/97	<1	<1	<1	<1	4.37	<1	<1	22.3	<1
CP-112	10/7/97	<1	<1	<1	<1	2.51	<1	<1	14.2	<1
CP-113	10/7/97	<1	<1	<1	<1	<1	<1	<1	8.41	<1
CP-114	10/10/97	<1	<1	<1	<1	<1	<1	<1	9.67	<1
CP-115A	10/13/97	<1	<1	<1	<1	<1	<1	<1	<5	<1
CP-115B	10/13/97	<1	<1	<1	<1	<1	<1	<1	5.94	1.09
CP-116	10/9/97	<1	<1	<1	<1	<1	<1	<1	10.2	<1
CP-117	10/9/97	<25	<25	<25	<25	52.3	<25	<25	<125	<25
CP-118	10/9/97	<1	<1	<1	<1	3.73	<1	<1	11.8	5.08
CP-119	10/9/97	<1	<1	<1	<1	46	<1	<1	<5	1.78
CP-121	10/13/97	<1	<1	<1	<1	<1	<1	<1	6.54	<1
CP-122B	10/10/97	<1	<1	<1	<1	<1	<1	<1	<5	<1
CP-205A	10/10/97	<1	<1	<1	<1	<1	<1	<1	<5	
CP-205B	10/10/97	<1	<1	<1	<1	<1	<1	<1	24.1	
MW-39-3	10/9/97	<1	<1	1.12	<1	20	<1	<1	249	
W-10	10/13/97	<1	<1	<1	<1	<1	<1	<1	7.24	

VOCs in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*75-09-2*	*156-60-5*	*75-34-3*	*108-05-4*	*156-59-2*	*78-93-3*	*67-66-3*	*71-55-6*	*56-23-5*
MTCA Method B (ug/l)		*5.83*	*160*	*800*	*8000*	*80*	*4800*	*7.17*	*7200*	*0.337*
Well Number	*Sample Date*	*Methylene chloride (ug/l)*	*trans-1,2-DCE (ug/l)*	*1,1-DCA (ug/l)*	*Vinyl acetate (ug/l)*	*cis-1,2-DCE (ug/l)*	*2-Butanone (ug/l)*	*Chloroform (ug/l)*	*1,1,1-TCA (ug/l)*	*Carbon tetra-chloride (ug/l)*
CP-103A	10/10/97	5.51	<1	<1	<1	<1	<5	<1	<1	<1
CP-103B	10/10/97	5.88	<1	<1	<1	<1	<5	<1	<1	<1
CP-104A	10/7/97	<5	<1	1.19	<1	1.36	<5	<1	<1	<1
CP-104B	10/7/97	<5	<1	4.86	<1	<1	<5	<1	<1	<1
CP-106A	10/10/97	7.39	<1	3.2	<1	3.18	<5	2.67	1.15	<1
CP-106B	10/10/97	9.53	<1	<1	<1	<1	<5	<1	<1	<1
CP-107	10/9/97	<5	<1	<1	<1	<1	42.8	<1	<1	<1
CP-108A	10/7/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-108B	10/7/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-109	10/9/97	5.79	<1	<1	<1	<1	<5	<1	<1	<1
CP-110	10/10/97	5.86	<1	<1	<1	<1	<5	<1	<1	<1
CP-111	10/7/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-112	10/7/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-113	10/7/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-114	10/10/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-115A	10/13/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-115B	10/13/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-116	10/9/97	<5	<1	1.3	<1	<1	<5	<1	<1	<1
CP-117	10/9/97	<125	<25	46.6	<25	58.2	<125	<25	<25	<25
CP-118	10/9/97	<5	<1	1.24	<1	<1	<5	<1	<1	<1
CP-119	10/9/97	<5	<1	12.9	<1	1.64	<5	1.85	<1	<1
CP-121	10/13/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-122B	10/10/97	8.33	<1	<1	<1	<1	<5	<1	<1	<1
CP-205A	10/10/97	<5	<1	<1	<1	<1	<5	<1	<1	<1
CP-205B	10/10/97	7.09	<1	<1	<1	<1	5	<1	<1	<1
MW-39-3	10/9/97	22.9	<1	2.94	<1	<1	20.4	<1	<1	<1
W-10	10/13/97	<5	<1	<1	<1	<1	<5	<1	<1	<1

VOCs in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*107-06-2*	*71-43-2*	*79-01-6*	*78-87-5*	*75-27-4*	*10061-01-5*	*108-10-1*	*108-88-3*
MTCA Method B (ug/l)		*0.481*	*1.51*	*3.98*	*0.643*	*0.706*	*PQL = 5*	*400*	*1600*
Well Number	*Sample Date*	*1,2-DCA (ug/l)*	*Benzene (ug/l)*	*TCE (ug/l)*	*1,2-Dichloro propane (ug/l)*	*Bromo-dichloro methane (ug/l)*	*cis-1,3-Dichloro-propene (ug/l)*	*4-Methyl-2-pentanone (ug/l)*	*Toluene (ug/l)*
CP-103A	10/10/97	<1	4.3	<2	<1	<1	<1	<5	<2
CP-103B	10/10/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-104A	10/7/97	<1	1.03	<2	<1	<1	<1	<5	<2
CP-104B	10/7/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-106A	10/10/97	<1	<1	2.43	<1	<1	<1	<5	7.05
CP-106B	10/10/97	<1	<1	<2	<1	<1	<1	<5	8.12
CP-107	10/9/97	1	2.91	<2	<1	<1	<1	<5	46.9
CP-108A	10/7/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-108B	10/7/97	<1	1.97	<2	<1	<1	<1	<5	<2
CP-109	10/9/97	1.29	37.2	<2	<1	<1	<1	<5	4.73
CP-110	10/10/97	<1	1.53	<2	<1	<1	<1	<5	<2
CP-111	10/7/97	<1	1.11	<2	<1	<1	<1	<5	<2
CP-112	10/7/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-113	10/7/97	<1	<1	<2	<1	<1	<1	<5	2.84
CP-114	10/10/97	<1	<1	2.06	<1	<1	<1	<5	25.8
CP-115A	10/13/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-115B	10/13/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-116	10/9/97	<1	2.78	<2	<1	<1	<1	<5	<2
CP-117	10/9/97	<25	36.1	<50	<25	<25	<25	<125	5170
CP-118	10/9/97	<1	19.5	<2	<1	<1	<1	<5	3.45
CP-119	10/9/97	5.08	46.2	<2	<1	<1	<1	<5	51.9
CP-121	10/13/97	<1	<1	2.54	<1	<1	<1	<5	18.7
CP-122B	10/10/97	<1	<1	<2	<1	<1	<1	<5	2.65
CP-205A	10/10/97	<1	<1	<2	<1	<1	<1	<5	<2
CP-205B	10/10/97	<1	<1	<2	<1	<1	<1	6.33	3.87
MW-39-3	10/9/97	2.84	6.58	6.53	<1	<1	<1	<5	156
W-10	10/13/97	<1	9.57	<2	<1	<1	<1	<5	8.03

VOCs in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*10061-02-6*	*79-00-5*	*127-18-4*	*591-78-6*	*124-48-1*	*108-90-7*	*100-41-4*	*1330-20-7*
MTCA Method B (ug/l)		*PQL = 5*	*0.768*	*0.858*	*PQL = 50*	*0.521*	*160*	*800*	*16000*
Well Number	*Sample Date*	*Trans-1,3-Dichloro-propene (ug/l)*	*1,1,2-trichloro-ethane (ug/l)*	*PCE (ug/l)*	*2-Hexanone (ug/l)*	*Dibromo-chloro methane (ug/l)*	*Chloro-benzene (ug/l)*	*Ethyl-benzene (ug/l)*	*m,p-Xylenes (ug/l)*
CP-103A	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-103B	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-104A	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-104B	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-106A	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-106B	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-107	10/9/97	<1	<1	<1	<5	<1	<1	<1	7.73
CP-108A	10/7/97	<1	<1	<1	<5	<1	<1	<1	1.65
CP-108B	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-109	10/9/97	<1	<1	<1	<5	<1	<1	1.93	3.64
CP-110	10/10/97	<1	<1	<1	<5	<1	<1	<1	2.76
CP-111	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-112	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-113	10/7/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-114	10/10/97	<1	<1	<1	<5	<1	<1	1.01	5.7
CP-115A	10/13/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-115B	10/13/97	<1	<1	<1	<5	<1	<1	<1	1.36
CP-116	10/9/97	<1	<1	<1	<5	<1	<1	<1	9.81
CP-117	10/9/97	<25	<25	<25	<125	<25	<25	9580	17900
CP-118	10/9/97	<1	<1	<1	<5	<1	<1	5.22	2.5
CP-119	10/9/97	<1	1.07	5.05	<5	<1	<1	19.3	54.5
CP-121	10/13/97	<1	<1	1.03	<5	<1	<1	<1	4.16
CP-122B	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-205A	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
CP-205B	10/10/97	<1	<1	<1	<5	<1	<1	<1	<1
MW-39-3	10/9/97	<1	<1	<1	<5	<1	<1	21.8	79.7
W-10	10/13/97	<1	<1	<1	<5	<1	<1	<1	2.99

VOCs in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*95-47-6*	*100-42-5*	*75-25-2*	*79-34-5*	*541-73-1*	*106-46-7*	*95-50-1*	*95-20-3*
MTCA Method B (ug/l)		*16000*	*1.46*	*5.54*	*0.219*	*PQL = 10*	*1.82*	*7.2*	*32*
Well Number	*Sample Date*	*o-Xylene (ug/l)*	*Styrene (ug/l)*	*Bromoform (ug/l)*	*1,1,2,2-tetrachloro-ethane (ug/l)*	*1,3-Dichloro-benzene (ug/l)*	*1,4-Dichloro-benzene (ug/l)*	*1,2-Dichloro-benzene (ug/l)*	*Naphthalene (ug/l)*
CP-103A	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-103B	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-104A	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-104B	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-106A	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-106B	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-107	10/9/97	2.4	<1	<1	<3	1.96	2.63	1.01	<5
CP-108A	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-108B	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-109	10/9/97	4.03	<1	<1	<3	<1	<1	<1	<5
CP-110	10/10/97	1.44	<1	<1	<3	<1	<1	<1	<5
CP-111	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-112	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-113	10/7/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-114	10/10/97	1.9	<1	<1	<3	<1	<1	<1	<5
CP-115A	10/13/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-115B	10/13/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-116	10/9/97	8.87	<1	<1	<3	<1	<1	4.41	28.1
CP-117	10/9/97	4520	<25	<25	<75	<25	<25	<25	<125
CP-118	10/9/97	4.58	<1	<1	<3	<1	<1	<1	<5
CP-119	10/9/97	39.6	<1	<1	<3	1.67	1.69	<1	<5
CP-121	10/13/97	1.25	<1	<1	<3	<1	<1	<1	<5
CP-122B	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-205A	10/10/97	<1	<1	<1	<3	<1	<1	<1	<5
CP-205B	10/10/97	<1	3.01	<1	<3	<1	<1	<1	<5
MW-39-3	10/9/97	32.4	<1	<1	<3	1.53	2.54	1.34	<5
W-10	10/13/97	1.51	<1	<1	<3	<1	<1	<1	<5

TPH in Groundwater
4th Quarter 1997
Pier 91 Facility

CAS Number		*68334-30-5*	*86290-81-5*	*N/A*
MTCA Method A (ug/l)		*1000*	*1000*	*1000*
Well Number	*Sample Date*	*TPH as Diesel (mg/l)*	*TPH as Gasoline (mg/l)*	*TPH (4.18) (mg/l)*
CP-103A	10/10/97	1140	590	<1000
CP-103B	10/10/97	<250	<300	1500
CP-104A	10/7/97	<250	<300	<1000
CP-104B	10/7/97	<250	<300	<1000
CP-106A	10/10/97	<250	<300	<1000
CP-106B	10/10/97	<250	<300	<1000
CP-107	10/9/97	1210	4240	<1000
CP-108A	10/7/97	<250	<300	<1000
CP-108B	10/7/97	<250	<300	<1000
CP-109	10/9/97	6270	1970	3500
CP-110	10/10/97	<250	<300	<1000
CP-111	10/7/97	<250	<300	<1000
CP-112	10/7/97	<250	<300	<1000
CP-113	10/7/97	<250	<300	<1000
CP-114	10/10/97	<250	<300	<1000
CP-115A	10/13/97	<250	<300	<1000
CP-115B	10/13/97	<250	<300	<1000
CP-116	10/9/97	1630	1210	1200
CP-117	10/9/97	22600	<300	6200
CP-118	10/9/97	13200	2000	16000
CP-119	10/9/97	1000		7000
CP-121	10/13/97	<250	<300	<1000
CP-122B	10/10/97	<250	<300	<1000
CP-205A	10/10/97	<250	<300	<1000
CP-205B	10/10/97	<250	<300	<1000
MW-39-3	10/9/97	6180	2260	7100
W-10	10/13/97	<250	4000	<1000